DOCUMENT RESUME

ED 039 150 SE 008 714

TITLE	Bibliography of Individualized Instructional Materials.
INSTITUTION	Educational Research Council of America, Cleveland, Ohio.
PUB DATE	[70]
NOTE	57p.
EDRS PRICE	EDRS Price MF-$0.25 HC-$2.95
DESCRIPTORS	Bibliographies, *Individualized Instruction, Instruction, *Mathematics, *Reading, *Sciences, *Social Studies

ABSTRACT

The introduction gives the rationale for individualized instruction, lists its advantages, outlines its history and current trends, discusses the role of the teacher in an individualized program, and reports on Individually Prescribed Instruction (IPI) programs developed at the Learning Research and Development Center, University of Pittsburg. A general bibliography on individualized instruction is included and references are given to documents bearing on IPI in mathematics, reading, science, and social studies; individualizing instruction in the elementary school; and individualizing instruction in secondary schools. Entries in the general bibliography include index codes which indicate the topics covered in the documents. (EB)

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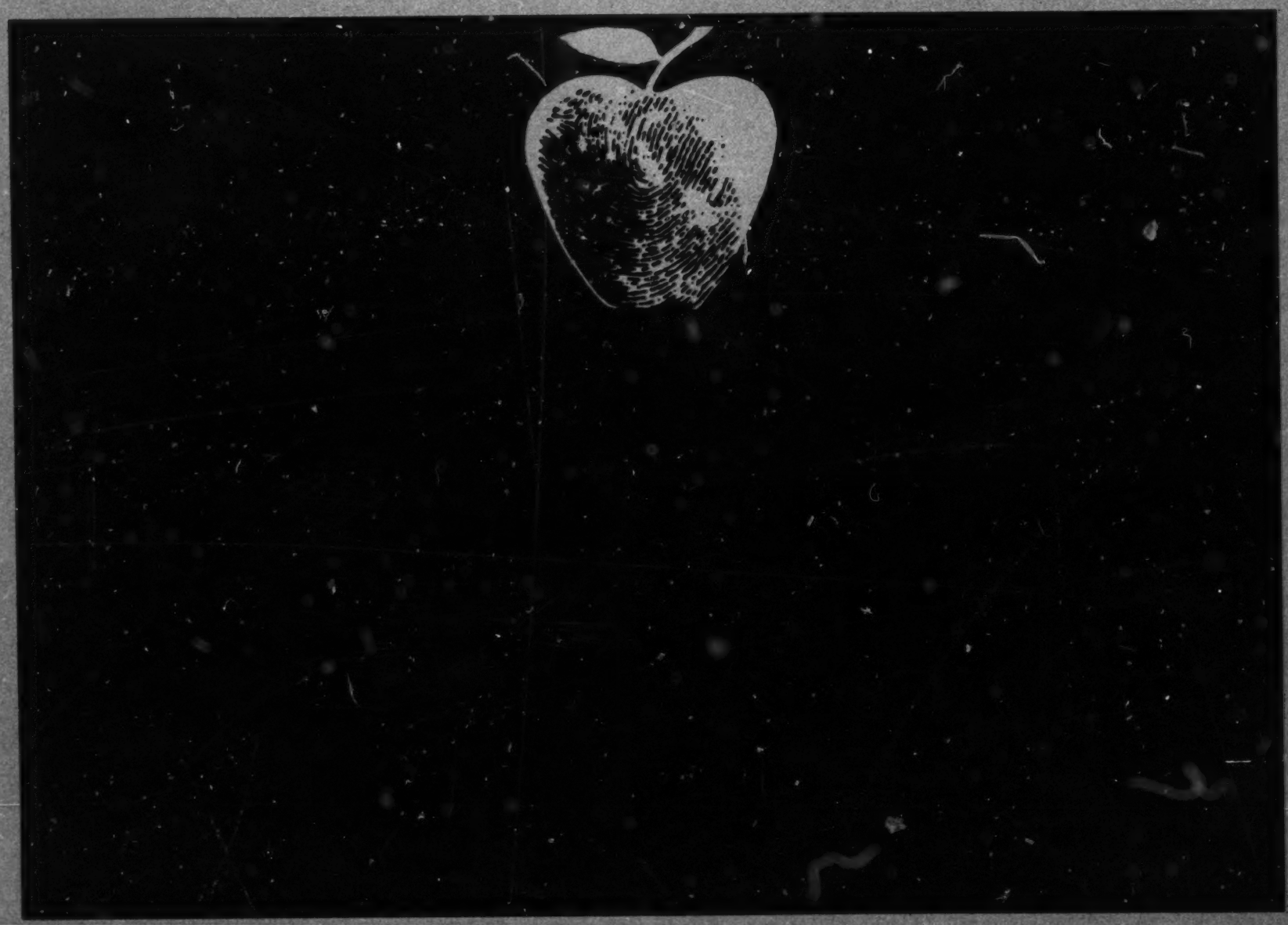

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Books are not men, and yet they are alive. They are man's memory and his aspiration. The link between the present and the past. The tools he builds with, all the hoarded thoughts winnowed and sifted from a million minds - living and dead, to guide him on his way.

Stephen Vincent Benet

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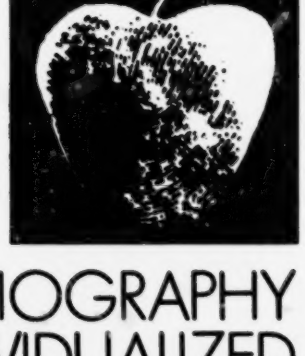

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It is not intended to be exhaustive,
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Printed at the Offices of
Educational Research Council of America
Rockefeller Bldg. — Cleveland, Ohio 44113

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I. INTRODUCTION

What is Individualized Instruction?*

Individualized Instruction means that the learning program for each curriculum area is organized in such a manner as to allow each child to move at his own pace under the guidance of his teacher. Instruction is non-graded, enabling each child to go as far in each subject as his ability permits.

Individualized Instruction does not mean the child works alone at all times. It does not mean that the teacher relinquished his responsibilities to a machine or to teaching materials. While the child works alone more than in traditional classrooms, the teacher has to diagnose his progress frequently and offer him, as well as small groups or the entire class, supplemental instruction where there is a common need.

Children cannot learn effectively through individualized instruction simply by being told to proceed at their own pace through the study of traditional materials. Specially prepared materials are essential. Present experience indicates that a series of projects, worksheets, or lessons are necessary, commencing at the very beginning of each subject and proceeding sequentially until all the content of the subject has been completed.

*Blake, Howard E. and McPherson, Ann W. "Individualized Instruction — Where Are We?" Educational Technology. December, 1969. Pp.63-64.

A History of Individualized Instruction*

As early as 1888 Preston W. Search had developed a systematic plan for adapting instruction to individual differences in secondary school classes. As pointed out by R.O. Billett,[1] perhaps the best-known early work was done by Frederick L. Burk, who developed individual instructional materials. Burk's ideas were carried further by Carleton W. Washburne, who had been on the staff of Burk's school. Washburne's plan came to be known as the Winnetka Plan[2]. Concurrently with Washburne, Helen Parkhurst developed the Dalton Laboratory Plan[3]. Other plans following the same general direction also emerged. The best known of these was the Morrison Plan[4] designed for use in secondary schools. As noted above, these plans are usually classified under the heading "laboratory methods."

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3. Parkhurst, Helen. "The Dalton Laboratory Plan." In Adapting the Schools to Individual Differences. 24th Yearbook, Part II, N.S.S.E. Public Schools, 1925. Pp 83-94.

4. Morrison, Henry C. The Practice of Teaching in the Secondary Schools. University of Chicago, 1926. Pp 661.

*Wingo, Max G. "Methods of Teaching." Encyclopedia of Educational Research. Third Edition, 1960. Page 854.

The Advantages of Individualized Instruction *

The experience gained from these and other programs indicates that individualized instruction has advantages for both the teacher and the child not found in other kinds of teaching.

For the child:

- It enables him to proceed at his own pace through the study of each subject.
- There is a one-to-one relationship between him and the subject he is studying.
- It permits him to get an immediate response to his answers; immediate satisfaction is gained.
- It enables him to understand better the structure of the subject he is studying.
- It enables him to study in greater depth those aspects of the subject which diagnostic tests indicate he needs, and to move with greater speed on those materials with which he is more familiar.
- Instruction is non-graded; each child can proceed in a subject as far as his ability will permit.

For the teacher:

- It frees the teacher from teaching many of the routine basic skills of a subject.
- It enables him to meet more accurately the instructional needs of each child.
- It furnishes him with diagnostic devices.
- It allows him to spend more time with students who need help the most.
- It enables him to bring a structured, carefully thought-out program to his pupils.
- It brings about a higher degree of job satisfaction.
- It helps the teacher to serve not only as a lecturer, but also as a guide to the pupil.

*Blake, Howard E. and McPherson, Ann W. "Individualized Instruction — Where Are We?" Educational Technology. December, 1969. Pp. 64-65.

The Teacher and Individualized Instruction *

Some educators take the point of view that individualized instructional programs will some day take the place of the teacher and eventually make the teacher's role unnecessary. Another frequently heard reaction is that prepared materials dehumanize learning. It is interesting to remember that teachers in the fifteenth century felt the same threats when the printing press was invented.

Individualized programs are but a start in what children must learn. They cannot possibly replace the teacher. Instead, they will take the load off the teacher for teaching much of the basic skills and content, leaving him valuable and much needed time to humanize learning — leading discussions, raising challenging questions, diagnosing, working with individuals, conferences, examining materials, planning, listening to children. Teachers seldom feel they can find enough time to devote to these matters, and this makes teaching frustrating. What better way can we give attention to these important concerns than by finding a way to be relieved of the teaching of a large portion of the basic skills and content?

Not only will individualized instructional programs give the teacher a new status and role in the classroom, but they will bring a new excitement into teaching and learning, making it a truly creative experience for teachers and children.

Good teachers will seek good individualized instructional programs and will develop a philosophy that will enable them to use this approach in their classrooms; for such programs offer the greatest assurance of raising the quality of both teaching and learning.

*Blake, Howard E. and McPherson, Ann W. "Individualized Instruction — Where Are We?" Educational Technology. December, 1969. Page 65.

Current Trends in Individualized Instruction *

For about the past ten years there has been a concerted effort to do something about individualizing instruction. Several factors have strengthened this movement.

1. More teaching materials have been developed to enable the teacher to organize his classroom on an individualized basis.

2. We have learned much more in recent years about the process of instruction itself. We have developed experience in producing programs of materials that teach a subject in relation to its basic structure and according to how children learn. We know that children must be involved in their learning and not merely told; that pupil interest is a great factor in learning; that reinforcement and immediate feedback of answers aids learning rate; and that children learn best when allowed to learn at their own pace.

3. Our country has realized that local school districts cannot provide all the financial support necessary for a quality educational program, and has significantly increased its financial support of schools.

4. Teacher-education institutions are preparing a "new breed" of teachers, committed to making schools more challenging for children.

5. The current emphasis on community involvement in schools has led parents to question the value of group-teaching and to demand that their children be provided instructional programs applicable to the children.

6. There is a growing feeling among teachers themselves that they want to individualize instruction.

Schools throughout the nation are currently testing numerous individualized instructional programs of one kind or another. The most notable of these is the project in Individually Prescribed Instruction (IPI) developed at the learning Research and Development Center, University of Pittsburgh.

Offered at the elementary school level in three subjects — mathematics, reading, and science — numerous worksheets or lessons have been developed for children to study on an individualized basis.

Frequent diagnosis of a child's progress is made by the teacher, who then writes a "prescription," telling the child which lessons he is to do next. Children study at their own pace, and may proceed as far in the study of each subject as they can.

IPI is currently offered in many selected schools throughout the nation. The Oakleaf Elementary School in Pittsubrgh is its demonstration-pilot school.

The Duluth, Minnesota, school system has developed its own curriculum for individualization. In that program, each subject area is broken down into a series of sequential contracts which children undertake and complete at their own pace. Other school systems throughout the nation — Dayton, San Francisco, San Mateo, Philadelphia, Washington, D.C. — are engaging in various experimental projects to individualize instruction.

*Blake, Howard E. and McPherson, Ann W. "Individualized Instruction — Where Are We?" Educational Technology. December, 1969. Page 64.

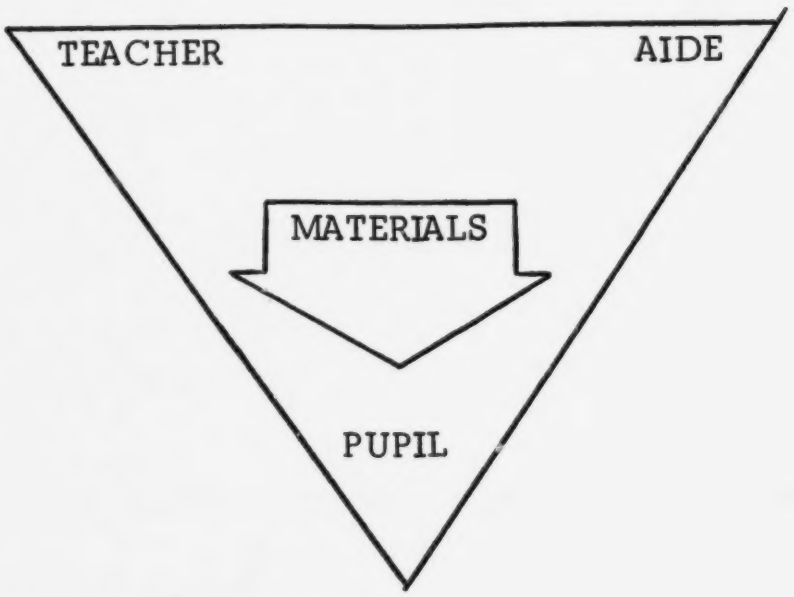
Individually Prescribed Instruction (IPI) *

An instructional system that includes:

- Placement tests and a prescription technology designed to place learners into their own properly tailored instructional content.
- Pretests to determine what the learner already knows about the content being taught.
- Instructional materials built around specified objectives for the content being taught.
- Checkpoints in the curriculum to guide the learner in measuring his individual progress.
- Posttests to measure the overall mastery of a unit of instruction.
- A management system for teachers.
- Training programs in the use of the instructional and management system for administrators, teachers, and teacher aides.
- A monitoring and data feedback network designed to improve the instructional and management system.

* Research for Better Schools, Inc. "A Progress Report: Individually Prescribed Instruction." September, 1969.

A Flow of the IPI System



Pupil is placed at his individual level and pretested

Obtains folder and materials and begins

Needs assistance

Individual tutoring
Group teaching
Peer group discussion
Supplementary materials

Returns to work

Completes work and takes to clerks

Takes to aide for new work

New skills assigned

More practice skills assigned

Assigned

Posttest

More practice needed

Individual tutoring
Group teaching
New materials
Different methods

Posttest reassigned

Mastery demonstrated

New prescription developed

IPI Results of Work to Date*

PUPIL ATTITUDES

- Based on interview data, IPI pupils like school better than non-IPI pupils.

- IPI pupils like math better than non-IPI pupils.

- One school, ghetto in nature, has reduced police contacts from an average of 137 per year to an average of one per year.

TEACHER ATTITUDES AND CHANGES

- Surveys conducted over the past three years indicate that teachers are highly positive about the IPI program.

- Teachers are working harder in IPI than they would in other programs but obtain greater satisfaction since they can meet the challenge of individual differences for each pupil.

- Teachers, in spite of all their critics, are willing to make significant changes in teaching for children if somebody is prepared to offer a program with specific direction and help.

- Teachers become diagnosers of learning instead of dispensers of information.

- Teachers provide valuable feedback information for program changes.

- Teachers are taught to use the instructional system in a short period of time.

- Teachers use data to correct their writing of prescriptions.

- Substitute teachers can, with little training, manage the system of IPI, thus providing for a continuity.

IPI Results of Work to Date*

The following highlights, general in nature, present some of the changes and results of our work to date. Such a summary affords the reader a thumb-nail sketch but not a detailed accounting. Most of the results and changes deal with the IPI mathematics instructional system.

PUPIL ACHIEVEMENT

- On standard achievement tests IPI pupils do as well as non-IPI pupils.

- Some statistical differences on standard achievement tests are occurring in favor of IPI pupils in special education and reform schools.

- Standard achievement tests do not adequately measure the IPI program since many of the IPI skills are not tested by standard normative referenced achievement tests (less than 30%).

- There is need for new test construction designed as criterion referenced tests as opposed to normative referenced tests.

- On IPI placement tests the IPI pupils score significantly higher statistically than do the non-IPI pupils.

- IPI does indeed provide for individualization for the learner by removing the ceiling for the learner. Scores and rate of progress for IPI pupils are statistically greater than those for the non-IPI pupils.

- Girls achieve at a higher rate than do boys in the IPI schools.

IPI Results of Work to Date*

ADMINISTRATORS

- The principal can be taught to use the system and in turn become the teacher and instructional leader for his own staff of teachers.

- New roles are created for the principal as an instructional leader.

- The principal uses data to manage the instructional system.

* Research for Better Schools, Inc. "A Progress Report: Individually Prescribed Instruction." September, 1969.

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Index Categories

This key is a description of the index numbers listed after each publication in the Bibliography. Numbers 1, 2, and 3 refer directly to the publication and are not specifically indicated throughout the content.

1. Author
2. Title
3. Year
4. Learning Research and Development Center
5. Research for Better Schools, Inc.
6. Rationale and Descriptive Papers
   a) IPI specific
   b) General, related programs, etc.
7. Testing
   a) General related theory
   b) IPI tests and testing program
8. Psychological Learning Modes and Learning Theory
9. Evaluation Questions and Design
10. Mathematics
11. Reading
12. Science
13. Oakleaf School
14. Other IPI Schools
15. Achievement
    a) Measures of rate
    b) Measure by IPI tests
    c) Measured by standardized tests
    d) Related factors
16. Attitude
    a) Pupil
    b) Teacher
    c) Other
17. Pupil Activities
18. Teacher Activities
    a) Prescription practices
    b) Other functions
    c) Training
19. Other Personnel Functions
    a) Aides
    b) Administrators
    c) Learning Research and Development Center
    d) Research for Better Schools, Inc.
20. Comparative Studies (IPI vs. non-IPI)
21. Objectives
22. Policy
    a) Research for Better Schools, Inc. Board
    b) Office of Education
23. News Media Releases

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